Abstract

A metal sheet drilling disk roll used to successively drill holes in along band-shaped metal sheet or metal foil, a metal sheet drilling device using the roll, a metal sheet drilling method, and a drilled metal sheet manufactured using the metal sheet drilling device and metal sheet drilling methods, the metal sheet drilling disk roll (1) comprising a plurality of drilling edge parts formed, in the state of being projected to the outer radial direction and at intervals in circumferential direction, on the outer peripheral surface of the disk roll with a specified thickness, wherein a flat edge part shape on the outer peripheral surface of a drilling edge part (2) is formed in a geometrical shape surrounded by one closed line, and a side edge part shape of the drilling edge part (2) as viewed from the side is formed in a recessed shape so that edge height at its both circumferential end parts is higher than at the other parts and that edge height is lowered gradually toward the center part from the both circumferential end parts.



(12)特許協力条約に基づいて公開された国際出願

(19) 世界知的所有権機関 国際事務局



(43) 国際公開日 2001 年3 月15 日 (15.03.2001)

PCT

(10) 国際公開番号 WO 01/17710 A 1

(51) 国際特許分類6:

WO 01/17710 A1

() = ()

B21D 28/12

(21) 国際出願番号:

PCT/JP99/04799

(22) 国際出願日:

1999 年9 月3 日 (03.09.1999)

(25) 国際出願の言語:

日本語

(26) 国際公開の言語:

日本語

- (71) 出願人 /米国を除く全ての指定国について): 東洋 鋼飯株式会社 (TOYO KOHAN CO., LTD.) [JP/JP]; 〒 100-8911 東京都千代田区霞が関一丁目4番3号 Tokyo (JP).
- (72) 発明者; および
- (75) 発明者/出願人 (米国についてのみ): 志水慶一 (SHIMIZU, Keiichi) [JP/JP]; 〒744-8611 山口県下松市 東豊井1296番地の1 東洋鋼飯株式会社 技術研究所 内 Yamaguchi (JP).

- (74) 代理人: 太田明男(OHTA, Akio); 〒100-8911 東京都 千代田区霞が関一丁目4番3号 東洋鋼板株式会社内 Tokyo (JP).
- (81) 指定国 (国内): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) 指定国 (広域): ARIPO 特許 (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), ユーラシア特許 (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), ヨーロッパ特許 (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI 特許 (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

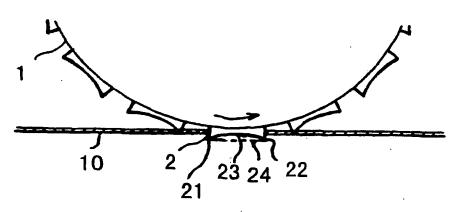
添付公開書類:

── 国際調査報告書

[続葉有]

(54) Title: METAL SHEET DRILLING DISK ROLL, METAL SHEET DRILLING DEVICE USING THE ROLL, METAL SHEET DRILLING METHOD, AND DRILLED METAL SHEET

(54) 発明の名称: 金属板穿孔用円板状ロール、それを用いた金属板穿孔装置、金属板穿孔方法、及び穿孔金属板



(57) Abstract: A metal sheet drilling disk roll used to successively drill holes in a long band-shaped metal sheet or metal foil, a metal sheet drilling device using the roll, a metal sheet drilling method, and a drilled metal sheet manufactured using the metal sheet drilling device and metal sheet drilling method, the metal sheet drilling disk roll (1) comprising a plurality of drilling edge parts formed, in the state of being projected to the outer radial direction and at intervals in circumferential direction, on the outer peripheral surface of the disk roll with a specified thickness, wherein a flat edge part shape on the outer peripheral surface of a drilling edge part (2) is formed in a geometrical shape surrounded by one closed line, and a side edge part shape of the drilling edge part (2) as viewed from the side is formed in a recessed shape so that edge height at its both circumferential end parts is higher than at the other parts and that edge height is lowered gradually toward the center part from the both circumferential end parts.

